

Date: Wed, 9 Mar 94 04:30:14 PST
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V94 #59
To: Ham-Ant

Ham-Ant Digest Wed, 9 Mar 94 Volume 94 : Issue 59

Today's Topics:

 Dipole or Vertical for DX? (2 msgs)
 Looking for comments...
 MFJ-245 SWR
 Slim-jim dimensions? (2 msgs)
 SWR and Grounding
 test (2 msgs)
 wanted ts 940, 811, 711, 140, 680 at dayton hamfest

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Tue, 8 Mar 1994 14:50:41 GMT
From: ihnp4.ucsd.edu!scubed!nuntius@network.ucsd.edu
Subject: Dipole or Vertical for DX?
To: ham-ant@ucsd.edu

Subject: Re: Dipole or Vertical for DX?
From: Scott Richard Rosenfeld, ham@wam.umd.edu
In article <2lfcp\$1t1@cville-srv.wam.umd.edu> Scott
Richard Rosenfeld, ham@wam.umd.edu writes:
>In article <1994Mar1.202545.1@ntuvax.ntu.ac.sg>,
> <asirene@ntuvax.ntu.ac.sg> wrote:
>>Hi,
>>
>> Just wanted to know if a dipole or vertical performs
better for QRP DX?
>> This is on 20 meters.

>>
>>73 de 9V Daniel
>>
>I don't think anyone will really disagree

Usenet readers treat statements like that as red flags.
I'll bet you get a lot of replies and disagreement on that
statement! Here is mine for starters.

>A vertical will do considerably better than a dipole for
ANY DX'ing, as long as you have >a good ground plane. The
vertical gives you a lower angle of radiation (imagine a
>donut-shaped emission from a dipole) than will a
horizontally-mounted dipole because
>a large part of the radiation travels at a low angle to
the horizon - which
>is exactly what you want for DX'ing.

The vertical radiation pattern (and angle of radiation if
you will) depends on the height of the antenna above
ground as well as the ground loss. The break even height,
that is where the radiated power at a given low angle is
the same for a vertical and horizontal dipole is usually
around a half wavelength above ground for "average ground"
and "typical DX signals". Moxon, G6XN, has covered this
in great detail in his book, HF Antennas for All
Locations, and includes several graphs illustrating the
point. The half wavelength break even height quoted is for
an angle of 6 degrees.

The half wavelength height above ground is not a hard and
fast rule as there are many exceptions observed
experimentally. Anyway, a half wavelength is about 33
feet or so on 20 meters so it is easy to erect both a
vertical and horizontal dipole and compare for yourself.

(Construction details of a half wavelength vertical
omitted)

James R. Duffey KK6MC/5
S-Cubed Division of Maxwell Laboratories
2501 Yale Street SE Suite 300
Albuquerque, NM 87106

Date: Tue, 8 Mar 1994 14:58:21 GMT
From: ihnp4.ucsd.edu!swrinde!gatech!wa4mei!ke4zv!gary@network.ucsd.edu

Subject: Dipole or Vertical for DX?
To: ham-ant@ucsd.edu

In article <1994Mar1.202545.1@ntuvax.ntu.ac.sg> asirene@ntuvax.ntu.ac.sg writes:
> Just wanted to know if a dipole or vertical performs better for QRP DX?
> This is on 20 meters.

Yes. One will generally work better than the other. Which one depends on a multitude of installation, location, and path factors, not all of which are under your control. Verticals over *excellent* ground fields often offer superior low angle radiation performance, but over poor ground, the dipole generally does better, especially if it's mounted at least 1/2-wave above effective ground. For closer in contacts, a low dipole will generally out-perform a vertical. Even over the same path, optimum takeoff angles can vary wildly depending on the state of the ionosphere. So we can't just say that a lower takeoff angle will always be better than a higher one for a given station pair.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: Wed, 9 Mar 1994 10:22:14 GMT
From: ihnp4.ucsd.edu!swrinde!gatech!wa4mei!ke4zv!gary@network.ucsd.edu
Subject: Looking for comments...
To: ham-ant@ucsd.edu

In article <2lj3i8\$7mn@cascade.ens.tek.com> t1terryb@cascade.ens.tek.com (Terry Burge) writes:

>
>
>I would like comments on a couple of things if the folks on the internet
>wouldn't mind.

>
>First off, I picked up a SWAN ST-1 antenna tuner and so far haven't been
>able to get it to work properly. Doesn't seem to lower the SWR, only
>effect how well the load takes the power or doesn't take it. It evidently
>uses two high power tunable caps in series with a tapped coil in between
>them to ground. I am considering modifying this unit to include a switch
>to bypass to the output or thru the tuner and also maybe reconfigure it
>into an Ultimate Match style tuner. But if others have run into problems
>with this type of tuner feeding a trapped vertical, I would like to hear
>what they found.

Well first, if the tuner affects how well the load takes power, it's doing it's matching job. So we have to question how you're measuring the SWR. A tuner does *not* reduce the SWR on the line to the antenna. It reduces the SWR *between* the tuner and the *transmitter*. So you need to place your SWR bridge in *that* jumper. You *should* be seeing a SWR reduction there when you adjust the tuner.

>Second, I live in a mobile home park and have my Butternut HF6V w/160/17/12
>meter mods mounted on the roof of the mobile home. It is 14X60 foot, metal
>roof and I have installed a bunch of radials for each band from 10-40 meters
>and also run a wire to a water pipe. Can't install anything for 80 or 160,
>too long. I would say there are about 8-12 radials for bands 10-20 and
>four or so radials for 40 meters. Each radial is cut per the formula for
>the bottom end of each band.

> I use galvanized electric fence wire for the radials, about 16-18
>gauge. They run un-insulated across the metal roof of the mobile home
>which is too thin to try and make a solid RF connection to. At least that
>is what I believe. I believe this installation could be considered a
>ground plane antenna less than a have wavelength above ground with extra
>radials to improve the counterpoise system. Kind of in between a ground
>mounted vertical and a true ground plane.

The only possible problem with this lashup is that you may get galvanic diode action between the fence wire and the trailer roof. Laying dissimilar metals on each other and running current through them is not a good idea. The trailer paint may save you, but I wouldn't count on it over the long haul.

>Question: Can anyone think of a way to improve this system or a possible
>alternative that might work better? Being in the low part of the sunspot
>cycle I have considered rigging up a 20 meter 5/8 wavelength monoband
>verticle and using a tuner to work the other bands. Any suggestions?
>My main interest is DX and contesting.

I'll offer an alternative. Since the trailer is 60 feet long, you have room to put up a flattop and feed it with ladder line. A 52 foot flattop should work well on 40 meters and down.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: 8 Mar 1994 07:22:17 GMT

From: ihnp4.ucsd.edu!usc!elroy.jpl.nasa.gov!wp-sp.nba.trw.com!
newswire.etdesg.TRW.COM!wayne@network.ucsd.edu

Subject: MFJ-245 SWR

To: ham-ant@ucsd.edu

At the risk of turning the thread into a rope--

:Can the MFJ-259 really measure feed-point resistance when it is
:inserted at the equipment end of the coax?

:Smitty, NA5K

1. Yes, sort of, and no.

Yes, Sort of:

With a half wave of coax feeding the antenna (or a multiple thereof), the feedpoint impedance is present at the opposite end. So, for example, with a 2:1 SWR on a half wave of 50 ohm coax, you know that the feedpoint is either 25 ohms or 100 ohms. If you know something about the antenna you might be able to resolve the ambiguity by a clever guess. Example: a bugcatcher mobile antenna with a 2:1 SWR probably has a feedpoint impedance of 25 ohms, rather than 100 ohms.

No:

The MFJ 259 goes up to 170 Mhz. If you had a long (say 100ft) chunk of crummy RG-58 cable shorted at the distant end, the MFJ may very well show a low SWR on the cable at 146 Mhz. For VHF measurements, don't measure through long lossy cable or measure closer to the antenna.

The same cable at 4 Mhz, shorted at the distant end would have a considerably higher SWR indicated.

:A general question: Can you dependably determine the resonance of an
:antenna by looking for the lowest SWR?

Yes, and no

Yes:

Lowest SWR occurs at resonance.

No:

For long lossy cable (example: 100 ft of RS RG-58 at 146 Mhz), the cable loss dissipates the reflected wave and makes the forward match look better. Watch out for this at VHF and above when using long runs of cable. Solution: measure the SWR near the antenna, or use low loss cable. (See table in ARRL handbook for attenuation per 100 ft vs frequency.

Example: 100 ft of RG-58 at 150 Mhz has 6 db of loss. Same
cable at 4 Mhz has 0.8 db loss)

--wayne W5GIE in Redlands, CA (HF, cw only; 145.44 FM)

00 "but they told me it was decaf!"

Date: Tue, 8 Mar 1994 13:52:52 GMT
From: ihnp4.ucsd.edu!swrinde!gatech!news-feed-1.peachnet.edu!umn.edu!kksys.com!
edgar!moron!nmmc!cgc.NMMC.Com!chrisc@network.ucsd.edu
Subject: Slim-jim dimensions?
To: ham-ant@ucsd.edu

In article <CM72rv.3qK@brunel.ac.uk> cs90nrs@brunel.ac.uk writes:

>
>I'm looking for the formulae required to produce a slim-jim. Specifically,
>I'm interested in using a slim jim as an antenna for a broadcast FM receiver
>using open-wire feeder for the antenna.
>
>Any help would be appreciated.
>
>73 Nick, G7ENS

Full details are shown in the current RSGB VHF/UHF Manual. You may also be
able to get a reprint of the original article. It appeared in Practical
Wireless circa 1981. It was designed and written up by (I think) Charlie
Dudd, and I seem to remember his call was G2AKU (but it's been a long time
since I read the article, so I could well be wrong on both counts, in which
case I apologise in advance :-))

Hope this helps...

Chris W0/G4JEC
Minneapolis, MN
EN34ju

--
Chris

Chris Cox W0/G4JEC
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----- For mail of a more social nature, please use -----

Internet: chrisc@moron.vware.mn.org
Amprnet: chrisc@biggus.g4jec.ampr.org

Date: Wed, 9 Mar 1994 08:01:40 +0000
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!pipex!uknet!demon!
g8sjp.demon.co.uk!ip@network.ucsd.edu
Subject: Slim-jim dimensions?
To: ham-ant@ucsd.edu

In article <chrisc.81.763134772@central.nmmc.mn.org>
chrisc@central.nmmc.mn.org "Christopher Cox" writes:

> In article <CM72rv.3qK@brunel.ac.uk> cs90nrs@brunel.ac.uk writes:
> >
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> Dudd, and I seem to remember his call was G2AKU (but it's been a long time
> since I read the article, so I could well be wrong on both counts, in which
> case I apologise in advance :-))

Just to set the record straight :-)

Fred Judd, G2BCX
Practical Wireless, April 1978

See. America is bad for your memory.

--
Iain Philipps

Date: Wed, 9 Mar 1994 10:09:45 GMT
From: ihnp4.ucsd.edu!swrinde!emory!wa4mei!ke4zv!gary@network.ucsd.edu
Subject: SWR and Grounding
To: ham-ant@ucsd.edu

In article <94067.135244U12566@uicvm.uic.edu> James F. Foerster
<U12566@uicvm.uic.edu> writes:

>This is a dumb question from a novice with a Tech + ticket.

>

>Would the quality of my grounding system affect the performance of a 10
>meter dipole? I prune and prune (and lengthen), but can't get below 3:1
>and there is no real "dip" to indicate resonance. The Xmitter (Drake
>T4XB loads up fine and does not complain, however). I am using a balun
>(commercial - just purchased).

Unless you've accidentally grounded the dipole, your ground system should have little effect on the antenna. Dipoles are balanced antennas and can work without *any* ground connections. If your dipole is *really* low above ground, you *may* have accidentally grounded your dipole through capacitive coupling to ground. If it's at least 16 feet above ground, however, it should show a pronounced SWR dip at resonance. Now it may not reach 1:1, but that's not very important.

The fact that the Drake loads fine doesn't tell us much, a Drake can load into just about *anything*. You may have a bad balun (you don't *really* need one on a dipole, though it can help prevent feeder radiation). Or, you may have wired something up wrong. The latter is most likely. The balun is a confusion factor here, remove it and make sure the shield connects to one leg of the dipole and the center connects to the other. There should be an open circuit between the center and shield at the transmitter end if you measure with an ohmmeter. If not, you're using the coax as a dummy load for the Drake.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: 6 Mar 94 18:20:28 GMT

From: dog.ee.lbl.gov!agate!howland.reston.ans.net!cs.utexas.edu!oakhill!

victorc@ucbvax.berkeley.edu

Subject: test

To: ham-ant@ucsd.edu

test

Date: 6 Mar 94 18:21:05 GMT

From: dog.ee.lbl.gov!agate!howland.reston.ans.net!cs.utexas.edu!oakhill!
victorc@ucbvax.berkeley.edu
Subject: test
To: ham-ant@ucsd.edu

test

Date: Tue, 8 Mar 1994 06:04:34 GMT
From: ihnp4.ucsd.edu!usc!math.ohio-state.edu!sol.ctr.columbia.edu!caen!
malgudi.oar.net!news.ysu.edu!news.cps.udayton.edu!dmapub!apontej@network.ucsd.edu
Subject: wanted ts 940, 811, 711, 140, 680 at dayton hamfest
To: ham-ant@ucsd.edu

I am interested in any of the above.. needs to be a good
contest radio... will have to try out. need to see the
serial port command page to make sure it is compatible with
certain software package. indicate if cat serial port box
is available...
73's from kp4uy

End of Ham-Ant Digest V94 #59

